Energy Policy Update

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The Energy Policy Update electronic newsletter is published by the Arizona Governor's Office of Energy Policy and is provided free of charge to the public. It contains verbatim excerpts from international, domestic energy, and environment-related publications that are reviewed by community outreach personnel. For inquiries, call 602-771-1143 or toll free to 800-352-.5499. To register to receive this newsletter electronically or to unsubscribe, email Gloria Castro.

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ARIZONA-RELATED

Arizona Regulator Calls Out Solar Campaigns

APS, rooftop-panel industry ordered to reveal funding for ad war over customer subsidies
[Arizona Republic, Oct. 31] An Arizona utility regulator, troubled by a bitter public battle over solar subsidies, is demanding to know how much money power companies and rooftop-solar supporters are pumping into competing marketing campaigns. Arizona Corporation Commission member Bob Burns says he is upset by the campaigns, which he said could intimidate the five elected commissioners on a decision that might shape the future of residential solar use across the country. **Read Bob Burns' letter >>>** Burns expressed concern that ratepayer money might be funding these campaigns. Television advertisements blasting the solar industry and, conversely, Arizona Public Service Co. have proliferated as both sides square off over the utility's plan to cut solar subsidies. Burns' request, which was filed with the commission on Wednesday, comes less than two weeks after *The Arizona Republic* reported that APS sent money to at least two non-profits that spent hundreds of thousands of dollars on ads. APS is seeking to increase the bills of new solar customers an estimated $50 to $100 per month to cover their cost of using the power grid. The commission, which regulates utilities in the state, is expected to discuss APS' proposal at its Nov. 13-14 meeting. Burns said the magnitude of the ad campaigns and the misleading information in them have left him with questions about where money is coming from to finance the battle.

ASU Collaboration Creates Breakthroughs for Solar Cell Efficiency

[ASU News, Oct. 25] Did you know that crystals form the basis for the penetrating icy blue glare of car headlights and could be fundamental to the future in solar energy technology? Crystals are at the heart of diodes. Not the kind you might find in quartz, formed naturally, but manufactured to form alloys, such as indium gallium nitride or InGaN. This alloy forms the light emitting region of LEDs, for illumination in the visible range, and of laser diodes (LDs), in the blue-UV range. Research into making better crystals with high crystalline quality, light emission efficiency and luminosity is also at the heart of studies being done at Arizona State University by research scientist Alec Fischer and doctoral candidate Yong Wei in professor Fernando Ponce's group in the Department of Physics. In an article recently published in the journal Applied Physics Letters, the ASU group, in collaboration with a scientific team led by professor Alan Doolittle at the Georgia Institute of Technology, has just revealed the fundamental aspect of a new approach to growing

InGaN crystals for diodes, which promises to move photovoltaic solar cell technology toward record-breaking efficiencies.

Clarkdale Dedicates $5.3 Million Wastewater Plant

[Verde Independent, Oct. 31] The Town of Clarkdale dedicated its new wastewater treatment plant Oct. 29, the culmination of a project that will recycle more wastewater at a higher quality. Utilities Director Wayne Debrosky said the dedication could be looked at as the finish line in an effort that has lasted more than 25 years to bring a new facility to Clarkdale. The new facility will produce 350,000 gallons of A+ effluent each day.

Natural-Gas Line Monitored

[Arizona Republic, Oct. 29] A Southwest Gas official says the company is closely monitoring more than 6,000 miles of pipe installed in central Arizona that is showing uncommon signs of wear. The pipe is between about a one-half inch and 4 inches in diameter, spokeswoman Amy Washburn said, and has been found to show visual signs of bubbling but is not leaking gas. “Aesthetically, it can look a little different, but it is not causing any leak issue,” she said. “Through all of our efforts and continuous surveying, it has no higher leak rate than any other pipe we have in our system.” Every inch of pipe in the Southwest Gas system is surveyed at least once every three years, if not more frequently, she said. “We are an industry leader on safety,” Washburn said. The dangers of natural-gas leaks were made apparent Oct. 16, when two people were severely burned in Peoria in a house fire that officials believe was caused by leaking gas.

Solar Battle Flares Up in Arizona

[Energy Manager Today, Oct. 28] The utility, Arizona Public Service Company (APS), has admitted to funding some anti-solar ads. The Arizona Republic reported that APS acknowledged it provided money to two conservative non-profits that ran anti-solar ads: 60 Plus and Prosper. The 60 Plus ad said: “Connected companies getting corporate welfare. Now California’s new Solyndras, SunRun and SolarCity, are getting rich off hard-working Arizonans.” The Prosper ad claimed homeowners with solar are paid five times the market rate for the power they produce and return to the grid and that other ratepayers have to foot the bill for that. The battle in Arizona stems from some changes to net metering rules that APS has proposed. APS says customers with solar installations who get credit for the electricity they send to the power grid are getting a better deal than non-solar customers who must pay the costs of maintaining the utility’s infrastructure. But The Alliance for Solar Choice (TASC) says solar customers need a financial incentive and that APS is trying to destroy the solar industry. TASC was formed by four solar companies – SolarCity, Sungevity, Sunrun and Verengo –to ensure the continuation of net energy metering. The Arizona Corporation Commission is slated to begin hearings on APS’ net-metering proposal in November. APS spokesman Jim McDonald told the Arizona Republic, that APS supports solar, but the company views net metering as unfair to non-solar customers. For its part, TASC is requesting the Arizona Corporation Commission and Arizona Attorney General’s Office to investigate if APS used ratepayer money to support the non-profits who ran the anti-solar ads. APS told the Arizona Republic it made the contributions from profits of its parent company Pinnacle West, a publicly-traded company.

Solar Proposal Seeks Accord

[Arizona Republic, Oct. 30] An important Arizona consumer advocate suggests that new customers who put solar on their homes should start paying about $7 a month in additional fees to pay for their use of the power grid. The Residential Utility Consumer Office, formed by the Legislature to intervene in utility issues on behalf of customers, discussed its proposal Wednesday with *The Arizona Republic*. Earlier this year, Arizona Public Service Co. asked utility regulators to increase the monthly bills on new customers who install solar, contending that its policy to give those customers credit for their excess electricity sent to the grid is too generous. APS officials say solar customers don’t pay their fair share of using the grid, pushing those costs onto non-solar customers. Solar companies have fought the proposed changes, saying they would kill the industry

because they would wipe out the ability for people to reduce their bills with solar panels. RUCO took the concerns of solar and non-solar customers into account when reaching its proposal, Director Pat Quinn said.

SRP Watching Solar Debate

[Arizona Republic, Nov. 3] Arizona Public Service Co.'s proposal to reduce incentives for rooftop solar has garnered most of the attention recently, but Salt River Project is also likely to increase bills for new solar customers. APS has asked the regulators at the Arizona Corporation Commission to increase bills for new customers who install rooftop solar. The commission is expected to review the matter Nov. 13. SRP is the second-largest utility in the state, but not regulated by the commission. SRP officials say they agree in general with APS that solar customers' bills are too low. If SRP wants to change its policies, the utility managers need only present a plan to their elected board of directors. SRP gets about 0.7 percent of its total power supply from solar, both on customers' rooftops and big power plants. APS gets about 4.7 percent of its power from solar, mostly from big power plants, though it also has nearly 20,000 customers with rooftop solar. Solar customers at both utilities, and many others in 43 states, get credit for the excess electricity their solar panels send to the grid through a system called net metering. The customers use the credit for this surplus to offset electricity they must buy from their utility at night when their panels are dormant. SRP officials have said they will wait to see what happens with APS' request before making a change of their own, SRP spokesman Jeff Lane said.

States to Focus on Economic Development through Clean Energy

[National Governors Association website, Oct. 31] WASHINGTON — The National Governors Association (NGA) today announced the selection of four states—Arizona, Minnesota, Mississippi and Puerto Rico—to participate in a Policy Academy on Targeting Clean Energy for Economic Development. The objective of this initiative is to assist states in aligning economic development and energy strategies that foster growth in clean energy industries. The approach will combine tools and strategies of both economic development and energy policy to help states tap into growing markets in the United States and abroad. The selected states also will cover a range of technologies, including renewable energy, energy efficiency and biofuels. "This is a great opportunity to help promote economic development within Arizona's renewable energy industry," said Arizona Gov. Jan Brewer. "By bringing together public and private stakeholders to help develop and advance sound policy, Arizona is uniquely positioned to benefit from the success of this emerging market." Selected states will be guided through a strategy development process aimed at understanding local strengths and economic opportunities, building a competitive business base across the supply chain and growing the market for clean energy technologies products and services.

Strong Earnings Reported for First Solar Inc.

[Arizona Republic, Oct. 31] Tempe's First Solar Inc. reported strong third-quarter earnings thanks to revenue from some of its marquee solar-plant projects, including the huge Desert Sunlight power plant under construction in Riverside County, Calif. Earnings beat analysts' expectations even though the company took a $56 million hit from the sale of its never-opened factory in Mesa, which is being sold to an undisclosed company. The $115 million sale should close in the next two months, officials said. Profit of $195 million, or $1.94 per share, compared with $87.9 million, or $1 per share, in the same quarter last year, First Solar reported.

Two Years Later: Perrin Ranch Wind Farm Lives Up to APS' Expectations

Officials with Arizona Public Service and NextEra say wind farm located 13 miles north of Williams off Highway 64 operates on average at 30 percent capacity

[Williams News, Oct. 29] At maximum capacity, Perrin Ranch Wind Farm can power about 25,000 Arizona homes, according to Arizona Public Service (APS), the company that buys the power. On average, the wind farm operates at 30 percent capacity-enough to power about 8,000 homes. Perrin Ranch is located about 13 miles north of Williams off

of Highway 64. The wind farm went into commercial operation on June 25, 2012, meaning it had completed its testing and was performing satisfactorily at that point. NextEra runs the wind farm and APS buys all of the energy it produces under the terms of a 30-year contract. So far, Perrin Ranch is meeting the expectations of APS and NextEra.

Unsure About Net Metering? Here's A Primer for Debate

APS seeking to change system for solar customers

[Arizona Republic, Oct. 28] The term "net metering" sounds complex, but it's simply a system in which customers with solar panels on their houses get credit for the electricity they send to the power grid. They use those credits to offset the electricity they buy from the utility at night or when their panels are not making enough electricity to meet their needs.

Will Arizona's Solar Showdown Set Precedent for the Nation?

APS, solar industry squaring off over how much rooftop customers should get for their power

[Arizona Republic, Oct. 29] Arizona finds itself as the national hot spot when it comes to solar subsidies, with utility executives and industry officials squaring off in a showdown that could shape the future of residential solar use across the country.

ALTERNATIVE ENERGY AND EFFICIENCY

KYOCERA Announces 1000-Volt Solar PV Modules

Higher voltage lowers labor and materials costs, increases system efficiency

[KYOCERA.com, Oct. 22] Scottsdale, AZ – Kyocera Solar Inc. today announced plans to offer new 1000-volt solar photovoltaic (PV) modules designed to significantly reduce labor and materials costs while simultaneously increasing overall system efficiency. U.S. electrical code was only recently amended to allow 1000-volt solar modules, following a similar development in Europe that enables wider use of high-efficiency 1000-volt inverters. By specifying a 1000V system instead of the previous 600V standard, installers can reduce total system costs by a substantial amount — up to 20 percent, according to Kyocera engineers, depending on the individual project. The cost reduction is achieved in several ways.

Lockheed Signs Deal to Design Largest Ocean Thermal Electric Plant

Leading U.S. defense contractor Lockheed Martin signed a contract on Wednesday to design the biggest power station fueled by differences in ocean temperatures, a 10-megawatt plant that would provide electricity for a new Asian resort.

[Reuters, Nov. 4] WASHINGTON – Leading U.S. defense contractor Lockheed Martin signed a contract on Wednesday to design the biggest power station fueled by differences in ocean temperatures, a 10-megawatt plant that would provide electricity for a new Asian resort. The contract between Lockheed and Beijing-based Reignwood Group, a Chinese consumer products and lifestyle firm, is the initial 10-month stage in a 3-1/2-year effort to build the green energy electric plant, which would generate power using a process known as ocean thermal energy conversion (OTEC).

Power Plants Try Burning Wood With Coal to Cut Carbon Emissions

[New York Times, Nov. 3] WASHINGTON — Even as the Environmental Protection Agency considers requiring existing coal-fired power plants to cut their carbon dioxide output, some utilities have started to use a decidedly low-tech additive that accomplishes that goal: wood. Ranging in size from sawdust to chunks as big as soup cans, waste wood from paper mills, furniture factories and logging operations has been used with varying levels of success. Minnesota Power, which once generated almost all of its power from coal and is now trying to convert to one-third renewables and one-third natural gas, found that co-firing with wood was a quick way to move an old plant partly to the renewable category. "We're finding an emissions improvement benefit, and an economic benefit," because the wood is cheaper than coal, said Allan S. Rudeck Jr., Minnesota Power's vice president for strategy and planning. One boiler at the company's Rapids Energy Center, near Grand Rapids, Minn., has run at up to 90 percent wood. For

companies like Minnesota Power, co-firing will be one of the leading options if the E.P.A., which recently proposed limits on carbon emissions for new plants, follows through on its plan to develop limits for old ones. Using modest amounts of wood at a large number of coal plants could be a relatively quick way to phase in renewable energy. And unlike wind or solar power electricity from a boiler, burning wood is easy to schedule and integrate into the grid.

Shell Plants LNG at Truck Stops Along the Interstates: Kemp

[Reuters, Nov. 4] LONDON – In the decade to 2013, shale gas and oil transformed the U.S. and global energy markets. The next revolutionary development over the decade to 2023 is likely to be the widespread use of gas as a transport fuel, starting in the United States. Freight trucks powered by liquefied natural gas (LNG) rather than diesel could become a common sight on the U.S. interstate highway system under plans being developed and financed by Royal Dutch Shell. Shell (LSE: RDSB.L - news) has reached an agreement with TravelCenters of America (NYSE: TA - news) , a major truck stop operator, to run two LNG fuelling lanes at up to 100 of its sites along the interstates. Shell will fund the construction of fuelling lanes and associated storage capacity and supply the fuel, assuming most of the financial risk associated with the venture. In exchange, the oil and gas major gets access to prime fuelling locations along the most heavily used trucking routes to help realise its vision of making LNG a transport fuel.

This Little LED of Mine

[New York Times, Nov. 1] Nancy Finkelmeier tried to make the switch more than a year ago. After hearing that the long life of compact fluorescent bulbs would help her avoid changing the lights in her 15-foot ceilings so often, she got rid of her traditional incandescent bulbs in favor of the new ones. But there was a problem. “I don’t like that cool blue light that it emits,” said Ms. Finkelmeier, a retired nurse from Cincinnati. So she made another switch, to bulbs using a different technology called the light-emitting diode, or LED. It’s a change that regulators and manufacturers, frustrated by consumer rejection of compact fluorescents, hope that others will make as well, especially the millions who have stuck with their energy-guzzling traditional incandescent bulbs, even hoarding them as stricter efficiency standards phase out most of them. For several years, manufacturers have been making LED lights that increasingly mimic incandescents, while steadily bringing down their prices. Big-box retailers like Walmart are jumping into the market, offering their own brands of the bulbs, often for $10 or less. Regulators are getting involved, too. The Environmental Protection Agency recently finished overhauling lighting standards for its Energy Star program, making it easier for more LEDs to qualify for generous discounts. And California, a leader in all things green, is going even further, with elaborate new requirements to control not just how much electricity the bulbs use but how the light feels.

Weatherization Saves Families Energy and Money

[Energy.gov website, Oct. 28] This Wednesday, communities throughout the nation will celebrate National Weatherization Day, which recognizes an industry of weatherization service providers, state and local agencies, and researchers dedicated to improving the energy efficiency of homes throughout the nation. It is also a day to recognize the many families in need who are now benefitting from lower energy bills.

ENERGY/GENERAL

Natural Gas Industry Expects Gas Prices to Stay Within $6 in 2020

Over half of the natural gas industry participants who responded to a recent Black & Veatch survey expect gas prices to stay somewhere between $4.50 and $5.99/mmBtu in 2020. Meanwhile another 18 percent expect the price to be between $6 and $7.49, according to the survey findings released Oct. 30. Almost 11 percent of the survey participants expect gas prices to stay lower than $4.50 in 2020. Don’t expect to see prices much above $6 to $7 anytime soon, said Peter Abt, a chief author of the analysis. Abt is a managing director and leads the oil & gas strategy practice within Black & Veatch’s

management consulting division. Abt helped put together the 70-page "2013 Strategic Directions in the North American Natural Gas Industry." In a phone interview with *GenerationHub*, Abt said he was struck by the incredible sense of optimism throughout the natural gas industry. The gas industry is confident that it will play an increasingly large role electric generation as North America reduces its coal use.

Oil Companies Weigh Keystone Alternatives to Reach Gulf Coast

[Houston Business Journal, Oct. 31] Canadian oil companies have decided they can't afford to wait around any more while the Obama administration ponders the merits of approving the Keystone XL pipeline, The New York Times is reporting. Rather, Cenovous Energy, for example, is planning to expand its rail shipping capabilities from 7,000 barrels per day to up to 30,000 barrels per day by the end of next year. Rail is more expensive than pipeline transport of crude. During an exclusive interview with Houston Business Journal in May, Kinder Morgan Inc. (NYSE: KMI) President and COO Steve Kean said it can cost as much as $15 per barrel to move oil by rail, compared to $5 per barrel of oil on a pipeline. But the Obama administration's indecision has pushed companies to find alternative routes to get their oil to Houston-area Gulf Coast refineries. In total, Canada could quadruple its rail transport of oil to 900,000 barrels a day, the newspaper said.

INDUSTRIES AND TECHNOLOGIES

DOE Finds Super-Efficient Rooftop Technology

[Fierce Energy, Oct. 31] New super-efficient rooftop units that heat and cool commercial buildings offer significant energy and dollar savings, according to the U.S. Department of Energy's (DOE) Pacific Northwest National Laboratory (PNNL) -- reducing energy costs an average of 41 percent compared to units in operation today. PNNL research analyzes the operation of a commercial rooftop HVAC unit (Daikin) which competed in DOE's Rooftop Challenge, part of a broader DOE program known as the DOE Rooftop Campaign to promote the adoption of efficient rooftop units. The PNNL research estimates that if current rooftop units were replaced with devices similar to the challenge winner over a 10-year period, the benefits in terms of energy saved and reduced pollution would be about equal to taking 700,000 cars off the road each year and idle about eight average-size coal-fired power plants every year. Further, if all rooftop units with a cooling capacity of 10 to 20 tons were replaced immediately, DOE officials estimate the cost savings at around $1 billion annually. The PNNL team ran simulations for a typical 75,000-square-foot big-box store in three cities: Chicago, Houston, and Los Angeles, comparing the performance of the challenge winner to three types of units: those in use today, those that meet current federal regulations for new units, and those that meet more stringent ASHRAE 90.1-2010 standards. Compared to units in operation today that are ready for replacement, energy costs of the challenge winning unit were 33 percent less in Chicago, 44 percent less in Houston, and 45 percent less in Los Angeles and slashed energy demand by 15 percent, 37 percent, and 36 percent, respectively.

Mining Industry Slow to Adopt Renewable Energy Tech, Report Says

[Energy Manager, Oct. 28] Concern over the volatility of diesel prices, pressure from government regulators and a need to reduce energy costs and carbon footprint will push the mining industry to use more renewable energy, according to a Navigant Research report. Navigant Research forecasts that renewable energy technologies will supply between 5 percent and 8 percent of the world's mining industry power consumption by 2022. Natural gas generators also will be used more frequently due to the low cost and increased availability of the energy source, the report forecast. The "Renewable Energy in the Mining Industry" report estimates that less than 0.1 percent of power consumed by the mining industry today is generated from renewable energy, excluding hydropower. Mining companies have been slow to adopt renewable energy due to concerns about the risk of using a technology that the industry considers "unproven," according to the report. The industry is primarily concerned with maintenance schedules and costs associated with renewable energy technologies as well as its reliability.

Shunfeng Photovoltaic to Buy Suntech's Main China Assets for $492 Mln

[Wall Street Journal, Nov. 3] BEIJING – One of China's largest solar-panel makers is selling its core assets in China for 3 billion yuan ($492 million) to a smaller peer as it attempts to pay back creditors after defaulting on billions of dollars in debt earlier this year. Shunfeng Photovoltaic International Ltd. (1165.HK), a midsized solar company, said Sunday in a statement that it won a bid to acquire the main Chinese unit of Suntech Power Holdings Co. (STP), once the world's largest solar-panel supplier. The unit, known as Wuxi Suntech Power Co., owns more than two gigawatts of solar panel manufacturing capacity, intellectual property and a research and development unit, people familiar with the matter have said. Suntech, which has struggled due to the global overcapacity of solar panels and falling prices, defaulted on $541 million in U.S. convertible bonds in March, which triggered cross defaults on its Chinese debt and put Wuxi Suntech into bankruptcy proceedings in China. Including the bonds, Suntech holds more than $2.3 billion in mostly Chinese debt. Shunfeng has said that it paid a CNY500 million deposit to acquire Wuxi Suntech. Shunfeng said Sunday that it would pay an additional CNY2.5 billion within a month after the deal is approved by Shunfeng's shareholders and the local court overseeing the restructuring of Wuxi Suntech.

Smart Thermostats Seeing Revived Optimism

[Fierce Energy, Oct. 29] Smart thermostats have developed a degree of excitement alongside announcements of ambitious smart meter rollouts and demand response (DR) programs; however, the market for smart thermostats has struggled to gain traction, especially given a much higher perceived average cost compared to basic programmable thermostats. Navigant Research forecasts that global revenue from smart thermostats will grow from $85.5 million in 2013 to $1.4 billion in 2020. The global installed base of smart thermostats will grow from fewer than 1.4 million in 2013 to 31.9 million by 2020, the research projects. lso known as programmable communicating thermostats (PCT), smart thermostats utilize integrated technologies that surpass the basic sensing and control functions of traditional thermostats. Functions range from remote reading and control to fully automated control systems that balance learned user habits with utility demand-side management. In some cases, the smart thermostat is part of an integrated home automation system that includes other devices such as smart lighting, plugs, entertainment, and security systems

LEGISLATION AND REGULATION

DOE Announces Webinars on Energy Efficiency Competitions, Better Buildings Workforce Guidelines, and More

[Energy.gov, Oct. 30] EERE offers webinars to the public on a range of subjects, from adopting the latest energy efficiency and renewable energy technologies to training for the clean energy workforce. Webinars are free; however, advanced registration is typically required. You can also watch archived webinars and browse previously aired videos, slides, and transcripts.

Western Govs Want to Expand ITC Eligibility for Renewables

[Energy Prospects West, Oct. 29] The Western Governors' Association is urging Congress to change the eligibility standard for the federal Renewable Energy Investment Tax Credit to allow more projects to qualify, on grounds that it will stimulate the region's economy. In an Oct. 21 letter to Sens. Max Baucus (D-Mont.) and Orrin Hatch (R-Utah), and U.S. Reps. Dave Camp (R-Mich.) and Sander Levin (D-Mich.), WGA urged them to support legislation modifying the Section 48 Renewable Energy ITC from a "placed in service" eligibility standard to a "commence construction" standard. Sen. Baucus is chairman of the Senate Finance Committee and Sen. Hatch is a ranking member. In the House, Rep. Camp chairs the Ways and Means Committee, and Levin is a ranking member. The letter said that changing the ITC to a commence construction standard would allow a "variety of technologies and industries that are important to our state economies, including solar energy, fuel cells, microturbines, combined heat and power, small wind and thermal energy," to make full and effective use of the 30-percent ITC for

the duration of its existing authorization, which expires at the end of 2016.

Western Nukes May Get Stricter Oversight

[Energy Prospects West, Oct. 29] Western power plants might be subject to tougher oversight from Nuclear Regulatory Commission officials than plants in other regions of the United States, an Oct. 17 Government Accountability Office report suggested. NRC figures show reactors in NRC's western region had the highest number of low-level performance concerns -- known as "non-escalated findings" -- per reactor between 2000 and 2012, compared to NRC's three other administrative regions, the report found. There were fewer regional differences in the numbers of more-serious plant violations, GAO noted. Such "escalated findings" trigger greater review, the report added. The western region encompasses 21 reactors at 14 operating plants, including Columbia Generating Station in Washington, Diablo Canyon in California and Palo Verde in Arizona. NRC officials, including resident plant inspectors, "told us that they believe [the western region] identifies non-escalated findings more aggressively than other regional offices," GAO noted.

WESTERN POWER

Pumped-Storage Saga Takes New Twists

[Energy Prospects West, Oct. 29] Applications for pumped-storage projects in western states have flooded into FERC in recent years, and a few of them may be on the brink of receiving final licenses. FERC has launched an effort to look at ways to shorten reviews of closed-loop projects as a result of the passage of the Hydropower Regulatory Efficiency Act of 2013, but pumped-storage permitting and construction continues to be a long slog, often lasting a decade. FERC hasn't licensed a new pumped-storage project in the West for many years, but now two California projects are coming down the home stretch. One is the 400-MW Iowa Hill project, which the Sacramento Municipal Utility District proposed as part of the relicensing of its Upper American River Project, a complex of seven hydro projects with 11 reservoirs. Scott Flake, SMUD's manager of power generation, told *Energy Prospects West* the utility expects to receive a final license from FERC later this year or early next. SMUD filed its application with FERC in 2005.

Microsoft Enters 20-Year Deal for Texas Wind Power

[Associated Press, Nov. 4] HOUSTON (AP) — It takes a lot of energy to store all the data 1 billion people and 20 million businesses plug into their computers, phones, tablets and gadgets. So as part of an effort to become carbon neutral, Microsoft Corp. has entered a 20-year deal to buy power from a new wind farm in Texas, the first time the tech giant is directly purchasing electricity from a specific source. The deal announced Monday between Microsoft and RES Americas is being funded in part by money collected from a "carbon fee," an internal tax of sorts that the company has been charging its departments for every ton of carbon produced. Microsoft also hopes the deal will be a model for other parts of its global operations, said Brian Janous, Microsoft's director of energy strategy.

SMUD to Launch Natural Gas, Concentrating Solar Power Project

[Electric Light & Power, Nov. 1] The Department of Energy (DOE) announced a new concentrating solar power (CSP) project led by the Sacramento Municipal Utility District (SMUD). The project will integrate utility-scale CSP technology with SMUD’s 500-MW natural gas-fired Cosumnes Power Plant. Supported by a $10 million DOE investment, the DOE said this project will help design, build and test cost-competitive CSP-fossil fuel power generating systems in the U.S. Concentrating solar power technology uses sunlight to produce steam, which is then used to generate electricity. Hybrid systems couple traditional fossil fuel-powered plants with CSP technology to improve the efficiency and performance of both systems and marry baseload power with new, cost-effective capacity.

The Rise of A Giant Solar Power Plant In California's Central Plain

[Forbes, Oct. 31] A 250-megawatt solar power plant has risen from the beautiful Carrizo

Plain in central California, a project that relied on a hefty federal loan guarantee and will help the state meet its renewable energy mandate. The project's builder, SunPower SunPower, announced Thursday the completion of the California Valley Solar Ranch in San Luis Obispo County. The project is located in a beautiful swath of land that is ringed by mountains and blooms with wildflowers in spring. Electricity from the field of solar panels will go to Pacific Gas and Electric customers. California Valley Solar Ranch's completion reflects the emergence of large-scale solar farms in a state that has an aggressive goal of sourcing 33% of its power supplies from renewable sources by 2020. Many such projects have been proposed over the past 8 years, and the state's big three utilities have signed a slew of agreements to buy solar power from developers in order to meet the mandate. But shepherding those projects from conception to completion proves a tough challenge for many developers. Raising money and securing permits have been the two main obstacles that caused some to stumble and sell their projects or leave the project development business all together. Law lawsuits filed by environmental and community groups also have stalled projects or forced developers to modify their constructions plans and donate money for land conservation. While solar energy is a cleaner source of power, its development does come at a cost to the environment. Large-scale projects take up thousands of acres and typically located in the remote corners of the state.

ARIZONA STATE INCENTIVES/POLICIES

ARIZONA COMMERCE AUTHORITY (ACA)

- Angel Investment Tax Credit Program - The main objective of the Angel Investment program is to expand early stage investments in targeted Arizona small businesses. The program accomplishes this goal by providing tax credits to investors who make capital investment in small businesses certified by the Arizona Commerce Authority (ACA). To view the list of businesses that have been certified under this program please click here. LEARN MORE

- Arizona Innovation Accelerator Fund - The Arizona Innovation Accelerator Fund Program is an $18.2 million loan participation program funded through the U.S. Department of Treasury's SSBCI and managed by the Arizona Commerce Authority. The goal of this program is to stimulate financing to small businesses and manufacturers, in collaboration with private finance partners, to foster business expansion and job creation in Arizona. LEARN MORE

- Arizona Innovation Challenge - The Arizona Innovation Challenge is an investment in the minds of talented entrepreneurs in Arizona and around the world. The ACA will award $1.5 million to the most promising technology ventures that participate in the Challenge (awards may range from $100,000 to $250,000). LEARN MORE

- AZ Fast Grant - Enables Arizona-based technology companies to initiate the commercialization process. Total funds available for this grant round are $175,000. Maximum awards of $5,000 and $20,000 will enable companies to accomplish one of four scopes of work. LEARN MORE

- AZ Step Grant - Grant funding from the U.S. Small Business Administration (SBA) with matching funds contributed by the Arizona Commerce Authority (ACA) offering a number of services and tools to Arizona small businesses as they go global for the first time with sales or enter new, international markets. LEARN MORE

- Commercial/Industrial Solar Energy Tax Credit Program - The primary goal of the Commercial/Industrial Solar Energy Tax Credit Program is to stimulate the production and use of solar energy in commercial and industrial applications by subsidizing the initial cost of solar energy devices. The program achieves this goal by providing an Arizona income tax credit for the installation of solar energy devices in Arizona business facilities. LEARN MORE

- Healthy Forest - The primary goal of the Healthy Forest Enterprise Incentives Program is to promote forest health in Arizona. The program achieves this by proving incentives for certified businesses that are primarily engaged in harvesting, processing or transporting of qualifying forest products. LEARN MORE

- Job Training Program offers job-specific reimbursable grants for employers creating new jobs or increasing the skill and wage level of their current employees. Deadline: Year Round. LEARN MORE

- Renewable Energy Tax Incentive Program offers a refundable income tax credit and property tax reduction to companies in solar, wind, geothermal and other renewable energy industries who are expanding or locating a manufacturing or headquarters operation in Arizona. The tax credit is up to 10% of the total qualified investment amount and the property tax benefit can reduce a company's property taxes by up to 75%. Deadline: Year Round. LEARN MORE

- Research and Development Tax Credit is an Arizona income tax credit for increased research and development activities conducted in this state. Starting in 2010, a qualifying company may be eligible to claim a partial refund of its current year excess R&D credit. Applicants may apply at the end of their tax year but prior to filing a tax return with Revenue. LEARN MORE

Quality Jobs Tax Credit Program - The primary goal of the Quality Jobs Tax Credit program is to encourage business investment and the creation of high-quality employment opportunities in the state. The program accomplishes this goal by providing tax credits to employers creating a minimum number of net new quality jobs and making a minimum capital investment in Arizona. LEARN MORE

- **Bonds Administered by the Arizona Commerce Authority**
  - Private Activity Bonds (PAB) - Tax exempt bond financing, for federal purposes, offers an alternative financing mechanism for certain projects. LEARN MORE
  - Qualified Energy Conservation Bonds (QECB) - Tax credit bonds are available as an alternative financing mechanism for certain green projects. LEARN MORE

- **Federal Programs**
  - Small Business Innovation Research (SBIR) Program - SBIR is a competitive program that encourages small businesses to explore their technological potential, as well as, providing incentive to profit from its commercialization. LEARN MORE
  - Small Business Technology Transfer (STTR) Program - STTR is an important small business program that expands funding opportunities to meet the nation's scientific and technological challenges in the 21st century. LEARN MORE
  - Work Opportunity - The Work Opportunity Tax Credit (WOTC) is a federal tax credit of up to $9,000 that Congress provides to private-sector businesses for hiring individuals from nine target groups who have consistently faced significant barriers to employment. LEARN MORE

- Pollution Control Tax Credit - Provides a 10 percent income tax credit on the purchase price of real or personal property used to control or prevent pollution.

- Renewable Energy Production Tax Credit - An income tax credit awarded to utility-scale generation systems based on the amount of electricity produced annually for a 10-year period using solar or wind energy. Questions can be directed to Georganna Meyer (602-716-6927) or Elaine Smith (602-716-6924).

- Sales Tax Exemption for Machinery and Equipment

Exemptions are available for:

1. Machinery or equipment used directly in manufacturing, see ARS 42-5159(B)(1).
2. Machinery, equipment or transmission lines used directly in producing or transmitting electrical power, but not including distribution, see ARS 42-5159(B)(4).
3. Machinery or equipment used in research and development, see ARS 42-5159(B) (14).

Questions can be directed to Christie Comanita (602-716-6791).

Solar Liquid Fuel Tax Credit - Income tax credits are available for research and development, production and delivery system costs associated with solar liquid fuel. Questions can be directed to Georganna Meyer (602-716-6927) or Elaine Smith (602-716-6924).

Database of State Incentives for Renewables and Efficiency (DSIRE)

- Arizona Incentives/Policies
- Federal Incentives/Policies
- Solar Policy News - DSIRE provides summaries of current solar policy developments and an archive of past solar policy developments. Current solar news appears below the news archive, which is searchable by several criteria.

GRANTS

The following solicitations are now available:
(Click on title to view solicitation)

- U.S. Dept. of Agriculture - Rural Development Grant Assistance
- USDA Rural Community Development Utilities Programs - Response due November 12, 2013
- SunShot Initiative - Responses due November 20, 2014
- SBIR/STTR FY 2014 Phase II Release 1, Reference Number: DE-FOA-0001019 – Response Due Date: 12/10/2013 11:59:00 AM ES
- Solid Waste Management Grant - Response due December 31, 2013
- Energy Frontier Research Centers – Response due by January 9, 2014
- Environmental Sustainability - Response due February 20, 2014
- Energy for Sustainability - Response due February 20, 2014
- Environmental Health and Safety of Nanotechnology - Response due February 20, 2014
- Particulate and Multiphase Processes- Response due February 20, 2014
- Thermal Transport Processes - Response due February 20, 2014
- SunShot "Race to the Roof" Initiative - Registration due October 31,2014
- Repowering Assistance Program – Ongoing
- Rural Business Enterprise Grants– Ongoing
- Rural Business Opportunity Grants– Ongoing
- Renewable Energy RFPs - Solicitations for Renewable Energy Generation, Renewable Energy Certificates, and Green Power – Various Deadlines

ENERGY-RELATED EVENTS

2013

- Fall 2013 - Solar and Sustainable Buildings Tours
  Living with the Sun - Arizona Style 2013 - Tours of Solar and Sustainable Buildings
  Arizona Governor Jan Brewer has issued a proclamation designating October as Solar and Renewable Energy Month, recognizing the American Solar Energy Society's annual National Solar Tour of solar installations and energy sustainable buildings. As part of the National Tour, events in Arizona include a lecture and local tours on different weekends in different parts of the state. The tours provide an opportunity for the public to see solar and green building examples in person. Tours in Arizona can be experienced throughout the month at the following Arizona locations:
  - November 9-10 - Tucson Innovative Home Tour

- 2013 Transportation Summit
  November 15 (7:30am-9:00am) Chandler, AZ

- AWEA Wind Energy Fall Symposium
  November 6-8 Colorado Springs, CO

- Expo Industrial Convention
  Nov. 7-8 Hermosillo, Sonora Mexico

- Border Energy Forum XX
  November 6-9 San Antonio, TX

- Power Generation Week
  November 12-14 Orlando, FL

- Adapting to a Water-Stressed West
  November 4 ASU – Tempe, AZ

- 2013 North American NGV Conference & Expo
  November 18-21 Atlanta, GA

- GreenBuild International Conference and Expo
  November 20-22 Philadelphia, PA

- Ecobuild America 2013
  December 9-13 Washington, D.C.

- Green Building Lecture Series
  Granite Reef Senior Center Scottsdale, AZ

2014

- Energy, Utility & Environment Conference
  February 3-5, 2014 Phoenix, AZ

- 2014 Energy Outlook Conference
  February 4-7, 2014 Washington, DC

- Green Biz Forum 2014
  February 18-20, 2014 Phoenix, AZ

- Green Building Lecture Series
  Granite Reef Senior Center Scottsdale, AZ